

What is claimed is:

1. An isolated oligonucleotide of the sequence SEQ ID NO: 1.
- 5 2. An isolated oligonucleotide that hybridizes the complement of SEQ ID NO: 1 under stringent conditions and is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 2 in a polymerase chain reaction.
- 10 3. An isolated oligonucleotide of the sequence of SEQ ID NO: 1, wherein from about one to about three nucleotides are added or removed from the '5 end and/or from about one to about three nucleotides are added or removed from the 3' end, respectively, and wherein the oligonucleotide is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 2 in an polymerase chain reaction.
- 15 4. An isolated oligonucleotide of the sequence SEQ ID NO: 2.
- 20 5. An isolated oligonucleotide that hybridizes the complement of SEQ ID NO: 2 under stringent conditions and is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 1 in an polymerase chain reaction.
- 25 6. An isolated oligonucleotide of the sequence of SEQ ID NO: 2, wherein from about one to about three nucleotides are added or removed from the '5 end and/or from about one to about three nucleotides are added or removed from the 3' end, respectively, and wherein the oligonucleotide is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 1 in an polymerase chain reaction.
- 30 7. An isolated oligonucleotide having the sequence of SEQ ID NO: 3 or a sequence wherein wherein about one to about three nucleotides are added or removed from the '5 end and/or about one to about three nucleotides are added or removed from the 3' end of SEQ ID NO: 3.
- 35 8. A kit for detecting enteroviral RNA comprising a first isolated oligonucleotide of SEQ ID NO: 1 and a second oligonucleotide of any one of claims 4 to 6.
- 40 9. A kit for detecting enteroviral RNA comprising a first isolated oligonucleotide of SEQ ID NO: 2 and a second oligonucleotide of any one of claims 1 to 3.
- 45 10. A kit for detecting enteroviral RNA comprising a first isolated oligonucleotide of SEQ ID NO: 1 and a second oligonucleotide of SEQ ID NO: 2.

11. A kit for detecting enteroviral RNA comprising a first oligonucleotide selected from the group consisting of:

5 (A) an isolated oligonucleotide of the sequence SEQ ID NO: 1;

(B) an isolated oligonucleotide that hybridizes the complement of SEQ ID NO: 1 under stringent conditions and is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 2 in an polymerase chain reaction; and

10 (C) an isolated oligonucleotide of the sequence of SEQ ID NO: 1, wherein from about one to about three nucleotides are added or removed from the '5 end and/or from about one to about three nucleotides are added or removed from the 3' end, respectively, and wherein the oligonucleotide is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 2 in an polymerase chain reaction;

15 and a second oligonucleotide selected from the group consisting of

(A) an isolated oligonucleotide of the sequence SEQ ID NO: 2;

(B) an isolated oligonucleotide that hybridizes the complement of SEQ ID NO: 2 under stringent conditions and is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 1 in an polymerase chain reaction; and

20 (C) an isolated oligonucleotide of the sequence of SEQ ID NO: 2, wherein from about one to about three nucleotides are added or removed from the '5 end and/or from about one to about three nucleotides are added or removed from the 3' end, respectively, and wherein the oligonucleotide is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 1 in an polymerase chain reaction.

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12. The kit of claims 10 or 11 further comprising at least one probe oligonucleotide selected from the group consisting of:

30 (A) SEQ ID No: 3 or a sequence wherein about one to about three nucleotides are added or removed from the '5 end and/or about one to about three nucleotides are added or removed from the 3' end of the sequence set forth in SEQ ID NO: 3;

(B) SEQ ID No: 4 or a sequence wherein about one to about three nucleotides are added or removed from the '5 end and/or about one to about three nucleotides are added or removed from the 3' end of the sequence set forth in SEQ ID NO: 4;

35 (C) SEQ ID No: 5 or a sequence wherein about one to about three nucleotides are added or removed from the '5 end and/or about one to about three nucleotides are added or removed from the 3' end of the sequence set forth in SEQ ID NO: 5;

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13. The kit of claims 10 or 11 further comprising a PCR reaction buffer and DNA polymerase enzyme.

45 14. A method of detecting the presence of enteroviral RNA in a biological sample comprising:

(A) obtaining a biological sample from an organism;
(B) isolating nucleic acids from said sample;
(C) performing a polymerase chain reaction on said isolated nucleic acids using a first isolated oligonucleotide selected from the group consisting of:
(i) an isolated oligonucleotide of the sequence SEQ ID NO: 1;
(ii) an isolated oligonucleotide that hybridizes the complement of SEQ ID NO: 1 under stringent conditions and is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 2 in an polymerase chain reaction; and
(iii) an isolated oligonucleotide of the sequence of SEQ ID NO: 1, wherein from about one to about three nucleotides are added or removed from the '5' end and/or from about one to about three nucleotides are added or removed from the '3' end, respectively, and wherein the oligonucleotide is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 2 in an polymerase chain reaction;
and a second oligonucleotide selected from the group consisting of
(i) an isolated oligonucleotide of the sequence SEQ ID NO: 2;
(ii) an isolated oligonucleotide that hybridizes the complement of SEQ ID NO: 2 under stringent conditions and is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 1 in an polymerase chain reaction; and
(iii) an isolated oligonucleotide of the sequence of SEQ ID NO: 2, wherein from about one to about three nucleotides are added or removed from the '5' end and/or from about one to about three nucleotides are added or removed from the '3' end, respectively, and wherein the oligonucleotide is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 1 in an polymerase chain reaction,
(D) correlating a presence of an amplification product from said polymerase chain reaction with the presence of enteroviral RNA in said sample.

15. The method of claim 14 wherein, the biological sample is selected from the group consisting of a tissue sample, whole blood or serum, sputum, stool, urine, semen, pericardial fluid, nasopharyngeal/throat swabs, cerebrospinal fluid (CSF), and amniotic fluid.

16. The method 14 wherein the organism is a patient suspected of having being infected by an enterovirus.

17. The method of claim 14 where the polymerase chain reaction is a real-time polymerase chain reaction.

18. The method of claim 14 wherein a portion of an internal control DNA is amplified at the same time as said enteroviral RNA.

19. The method of identifying compounds capable of inhibiting enteroviral growth comprising:

(A) infecting a tissue culture with an enterovirus to obtain an infected tissue culture;

(B) contacting a portion of said infected tissue culture with a compound suspected of being capable of inhibiting enteroviral growth;

(C) isolating nucleic acids from the portion of said infected tissue culture contacted by said compound to obtain a first nucleic acid sample and from a portion of the remainder of the infected tissue culture not contacted by said compound to obtain a second nucleic acid sample;

(D) performing polymerase chain reaction on said first and said second nucleic acid samples, using a first isolated oligonucleotide selected from the group consisting of:

(i) an isolated oligonucleotide of the sequence SEQ ID NO: 1;

(ii) an isolated oligonucleotide that hybridizes the complement of SEQ ID NO: 1 under stringent conditions and is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 2 in an polymerase chain reaction; and

(iii) an isolated oligonucleotide of the sequence of SEQ ID NO: 1, wherein from about one to about three nucleotides are added or removed from the '5 end and/or from about one to about three nucleotides are added or removed from the 3' end, respectively, and wherein the oligonucleotide is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 2 in an polymerase chain reaction;

and a second oligonucleotide selected from the group consisting of

(i) an isolated oligonucleotide of the sequence SEQ ID NO: 2;

(ii) an isolated oligonucleotide that hybridizes the complement of SEQ ID NO: 2 under stringent conditions and is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 1 in an polymerase chain reaction; and

(iii) an isolated oligonucleotide of the sequence of SEQ ID NO: 2, wherein from about one to about three nucleotides are added or removed from the '5 end and/or from about one to about three nucleotides are added or removed from the 3' end, respectively, and wherein the oligonucleotide is capable of amplifying reverse transcribed enteroviral RNA when used in conjunction with SEQ ID NO: 1 in an polymerase chain reaction,

(D) whereby a decrease in an amplification product in the first nucleic acid sample relative to the second nucleic acid sample indicates that the compound is capable of inhibiting enteroviral growth.

20. The method of claim 19 wherein said tissue culture comprises cells derived from the group consisting of HEL, RMK, BGMK, MK, BGM, LLC-MK2, Vero, Hep-2, Rhadomyosarcoma, and new born mice.

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21. An isolated oligonucleotide having the sequence of SEQ ID NO: 4 or a sequence wherein wherein about one to about three nucleotides are added or removed from the '5 end and/or about one to about three nucleotides are added or removed from the 3' end of SEQ ID NO: 4.
22. An isolated oligonucleotide having the sequence of SEQ ID NO: 5 or a sequence wherein wherein about one to about three nucleotides are added or removed from the '5 end and/or about one to about three nucleotides are added or removed from the 3' end of SEQ ID NO: 5.